



**US Army Corps  
of Engineers**

Waterways Experiment  
Station

# RECNOTES

RECREATION  
RESEARCH  
PROGRAM

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INFORMATION EXCHANGE BULLETIN

MAY 1983



What makes this a very popular campsite when compared to others with less dramatic slope? The following article describes a new major study that will answer this and similar questions about sites, recreation areas, and projects.

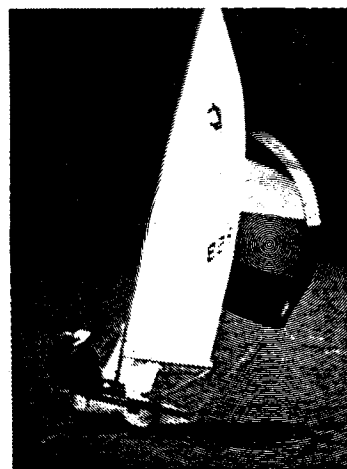
## KEY INDICATORS OF USE AT CORPS OF ENGINEERS RECREATION AREAS

*Michael R. Waring and Gregory L. Curtis  
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A major study was initiated in 1982 to determine indicators of use at Corps of Engineers water resources development projects. The study was designed to determine why visitors select a particular site, recreation area, or project over others with seemingly equal amenities. In order to do this, it was necessary to establish a list of general variables (indicators) based on characteristics of the site, area, or project which can be field tested for applicability in predicting use. This list of general variables can then be subdivided into smaller lists of specific

variables (key indicators) to be used in predicting use at a particular site, area, or project.

Possible applications of the results of this work unit are numerous. For example, the project/resource manager could use the information to distribute use between high and low areas or sites. Planners at the District level could use the information for improved layout of future sites and areas. A draft manual on guidelines to using key indicators will address these applications in greater detail. Suggestions or comments from Corps field elements



concerning this work unit are welcomed.

An initial test of site-level indicators was conducted at two Corps of Engineers projects during the 1982 recreation season: Greers Ferry Lake, Arkansas, and Sam Rayburn Lake, Texas. The projects were selected because they are representative of many Corps projects and contain a sufficient variety of recreation areas and campsites for adequate testing of site level indicators.

Criteria used in selecting and modifying variables for this study included ease of measurement, objectivity versus subjectivity, and applicability to eventual field use. The following variables were used in the initial test:

- Utility hookups (electric, sewer, water)
- Pad type
- Terrain analysis (erosion, slope, aspect)
- Off-site views
- Buffers (spatial, vegetative, topographical, manmade)
- Canopy
- Shade potential
- Distance to lake
- Shoreline type
- Lines of obstacles between site and lake
- Lines of obstacles between site and sanitary facility
- Distance to a sanitary facility
- Type of sanitary facility
- Edge effects (such as a paved road, trail, etc., that borders site)

Statistical tests were performed on data from each recreation area using all of the above variables except sewer and water hookups, terrain, aspect, shoreline type, and edge effects. These variables were excluded because difficulties were experienced in initial measurement and analysis. Nights occupied (from the receipt study data) was used as the dependent variable in the regression analysis.

Table 1 identifies the recreation areas included in the study and the variables that influenced the majority of selections (use) at each site. The R-square values in Table 1 are approximations of the amount of use of each area explained by the variables. For example, 80 percent of the variation in use at Devil's Fork recreation area was explained by a view of a significant landform, canopy, distance to the lake, and distance to the sanitary facilities.

Initial results indicate that several of the variables show promise as *key* indicators of site-specific use. These are distance and lines of obstacles to lake,

distance and lines of obstacles to a sanitary facility, slope, buffers, canopy, erosion, type of sanitary facility, and electric hookup. The remaining variables examined in 1982 may also have potential as key indicators; however, these must be reevaluated and retested during the 1983 recreation season. If at that time they still do not explain a significant amount of site use, they will not be considered key indicators.

In addition to continued testing of site-specific variables, a visitor survey will be conducted during 1983 to provide a better understanding of observed preferences. Indicators of use at the recreation area and project levels will also be hypothesized and tested. The surveys and additional tests will be conducted at Corps projects selected from those participating in the Campground Receipt Study.

TABLE 1. Variables that Influenced Campsite Selection

<b>Project: Recreation Area</b>	<b>Variables</b>	<b>R-Square (<math>p &lt; 0.01</math>)*</b>
<b>GREERS FERRY LAKE:</b>		
Devil's Fork	Land view	0.8045
	Canopy	
	Distance to lake	
	Distance to sanitary facility	
Sugar Loaf	Electric hookup	0.6577
	Back-in pad	
	Terrain (erosion)	
	Spatial buffering	
Heber Springs	Canopy	0.6511
	Distance to lake	
	Distance to sanitary facility	
	Sanitary facility type	
Narrows	Slope	0.6263
	Shade	
	Obstacles to lake	
	Distance to lake	
	Obstacles to sanitary facility	
<b>SAM RAYBURN LAKE:</b>		
Twin Dikes	Lake view	0.5335
	Distance to lake	
	Sanitary facility type	
	Spatial buffering	
Powell Park	Distance to lake	0.4872
	Obstacles to sanitary facility	
	Distance to sanitary facility	
	Sanitary facility type	

\*Amount of variation in use.

# VISITOR CENTER EVALUATION CHECKLIST

*Jack Ardner*

*Ohio River Division, Construction-Operations Division*

Engineer Regulation ER 1130-2-401 entitled "Visitor Center Program" established a requirement for an annual evaluation of each operational visitor center. The purpose of this evaluation is to ensure that all visitor center facilities, exhibits, audio-visual presentations, and other interpretive materials are up-to-date and that they comply with the Corps interpretive objectives.

Recently, the Ohio River Division developed a

checklist (refer to insert) that is used by evaluation teams to identify deficiencies at visitor centers. After the evaluation team completes an inspection, schedules are established for follow-up evaluation.

- Visitor centers with major deficiencies should be reinspected after corrective work is accomplished.
- Visitor centers that meet inspection criteria may be placed on a biannual reinspection schedule.

## OUTDOOR RECREATION BROCHURE PREFERENCES

The Corps distributes numerous brochures and pamphlets to inform and educate the public on its recreation program and facilities. In order to determine the effectiveness of these brochures, the following questions must be answered:

- ☐ What items and/or figures should be included?
- ☐ Will the visitor be satisfied with the quality?
- ☐ Does the information presented meet the needs and wants of the visitor?
- ☐ Is the information presented in a way that is easily understood by the visitor?

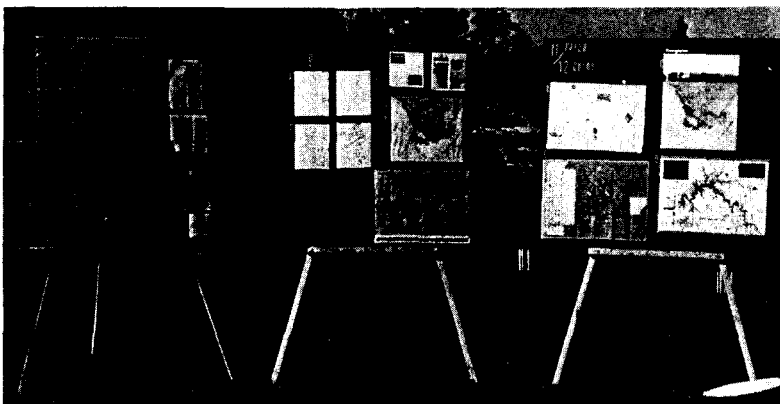
The literature reports very little research that would answer these questions on the effectiveness of brochures. Larry Taylor, U.S. Army Engineer District, Jacksonville, completed a related study that addressed the subject of individual preferences regarding outdoor recreation brochures.

Taylor developed a survey and implemented it at

four locations: Lake Ocklawaha, Jacksonville District; a Florida State Welcome Center; a Bass Anglers Sportsmen Society (B.A.S.S.) gathering; and a U.S. Power Squadron meeting. These sites were chosen to provide a variety of locations and respondent backgrounds in recreation and non-recreation settings. Participation in this survey was voluntary, and respondents were asked questions on their preferences about various Corps and non-Corps brochures representative of the following characteristics:

- ☐ Brochure size
- ☐ Map detail
- ☐ Method of information presentation
- ☐ Color usage
- ☐ Use of photographs
- ☐ Type of paper

From the results of this survey, the following recommendations can be made concerning brochure maps, text and paper: (see back page)



**VISITORS PARTICIPATE IN BROCHURE PREFERENCE STUDY**—A variety of brochures describing the recreation programs and facilities were displayed at a location selected to attract attention. Visitors were invited to participate in the survey described in the following article.

## Map

- Should be focal point of the brochure
- Should be detailed for both land and water but without unnecessary clutter
- Use symbols for park facility information rather than grid systems or written format
- One side of the brochure should contain text with photos on the reverse side
- Use earth-tone colors that are easy to see in the outdoors

## Text

- Use simple words in short sentences
- Enthusiasm should be reflected in writing

## Paper

- Use matte finish to avoid reflected glare
- Should be durable enough for repeated use
- Cut to 18 in. by 24 in. folded to a convenient size

Outdoor recreation brochures provide an important service by communicating (one-to-one) with the public. They can be extremely useful in explaining Corps management practices to visitors as well as identifying recreation facilities and interpreting important ecological and historical information.



## RECREATION RESEARCH PROGRAM

This bulletin is published in accordance with AR 310-2. It has been prepared and distributed as one of the information dissemination functions of the Environmental Laboratory of the Waterways Experiment Station. It is primarily intended to be a forum whereby information pertaining to and resulting from the Corps of Engineers' nationwide Recreation Research Program can be rapidly and widely disseminated to OCE and Division, District, and project offices as well as to other Federal agencies concerned with outdoor recreation. Local reproduction is authorized to satisfy additional requirements. Contributions of notes, news, reviews, or any other types of information are solicited from all sources and will be considered for publication as long as they are relevant to the theme of the Recreation Research Program, i. e., to improve the effectiveness and efficiency of the Corps in providing recreation opportunity at its water resource development projects. This bulletin will be issued on an irregular basis as dictated by the quantity and importance of information to be disseminated. Communications are welcomed and should be addressed to the Environmental Laboratory, ATTN: A. J. Anderson, U.S. Army Engineer Waterways Experiment Station, P.O. Box 631, Vicksburg, Mississippi 39180, or call AC 601, 634-3657 (FTS 542-3657).

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Colonel, Corps of Engineers  
Commander and Director

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**OHIO RIVER DIVISION  
VISITOR CENTER CHECKLIST**

District: \_\_\_\_\_ Project: \_\_\_\_\_ Date: \_\_\_\_\_

INSTRUCTIONS: 1. Some of the questions can be answered with a yes or no. These are indicated by a Y N on the appropriate line.

2. Most of the remaining questions should be evaluated on the basis of a scale of 1 to 5 (one = poor; three = average; five = very good). Circle the appropriate number.

**1. Visitor Reception**

- |   |  |   |   |   |   |   |
|---|--|---|---|---|---|---|
| a. Is the approach to the facilities inviting?                    |  | 1 | 2 | 3 | 4 | 5 |
| (1) Are sign directions clear and concise?                        |  | 1 | 2 | 3 | 4 | 5 |
| (2) Are there negative or prohibitive type signs?                 |  | Y | N |   |   |   |
| (3) Is parking easy and convenient?                               |  | 1 | 2 | 3 | 4 | 5 |
| (4) Is handicapped parking provided?                              |  | Y | N |   |   |   |
| (5) Are there barriers to handicapped?                            |  | Y | N |   |   |   |
| b. Does the visitor center establish a friendly and welcome mood? |  |   |   |   |   |   |
| (1) Are the surroundings warm and friendly?                       |  | 1 | 2 | 3 | 4 | 5 |
| (2) Is there a personal welcome message?                          |  | 1 | 2 | 3 | 4 | 5 |
| (3) Is there an orientation map for the building?                 |  | Y | N |   |   |   |
| (4) Is there an orientation map for the project?                  |  | Y | N |   |   |   |
| (5) Do the exhibits invite participation/involvement?             |  | 1 | 2 | 3 | 4 | 5 |
| (6) Are any exhibits directed towards children?                   |  | Y | N |   |   |   |
| (7) Are there interior architectural barriers for handicapped?    |  | Y | N |   |   |   |

**2. Graphics Standards**

- |   |  |   |   |  |  |  |
|---|--|---|---|--|--|--|
| a. Is the Corps identified properly using the new Corps signature and mark? |  |   |   |  |  |  |
| (1) Outside of the building?  |  | Y | N |  |  |  |
| (2) In the reception area?  |  | Y | N |  |  |  |
| b. Are other types of castles used?   |  |   |   |  |  |  |
| (1) How many?   |  |   |   |  |  |  |
| (2) When will they be changed?  |  |   |   |  |  |  |
| (3) If the traditional castle is used, is it appropriate?                   |  | Y | N |  |  |  |

**3. Exhibits and Displays**

- |  |  |   |   |   |   |   |
|--|--|---|---|---|---|---|
| a. Do they explain the need for the project, and how the dam structure meets this need?                |  | 1 | 2 | 3 | 4 | 5 |
| (1) Do they explain the project authorization process?   |  | 1 | 2 | 3 | 4 | 5 |
| (2) Do they show why the project was built in this location?   |  | 1 | 2 | 3 | 4 | 5 |
| (3) Do they explain how the project works?   |  | 1 | 2 | 3 | 4 | 5 |
| (4) Do they show how the project relates to others, and how it is part of an overall system?           |  | 1 | 2 | 3 | 4 | 5 |
| (5) Do they interpret the water resources?   |  | 1 | 2 | 3 | 4 | 5 |
| (6) Do they describe the project purposes?   |  | 1 | 2 | 3 | 4 | 5 |
| (7) Do they provide information on the natural and human history of the project area?                  |  | 1 | 2 | 3 | 4 | 5 |
| (8) Do they provide information on project visitor attractions, such as trails and points of interest? |  | 1 | 2 | 3 | 4 | 5 |
| b. Do they explain the Corps' role?  |  |   |   |   |   |   |
| (1) Why did the Corps build the project?   |  | 1 | 2 | 3 | 4 | 5 |
| (2) Do they describe the Corps history?  |  | 1 | 2 | 3 | 4 | 5 |
| c. Is there a central theme to the interpretative material, and is it appropriate?                     |  |   |   |   |   |   |
| (1) Does any one subject dominate the others? If so, what?   |  | Y | N |   |   |   |
| (2) Are the exhibits arranged in a logical order or sequence?  |  | Y | N |   |   |   |
| (3) Can you define the objectives of the major displays and exhibits?                                  |  | Y | N |   |   |   |
| (4) Do these objectives fit into the central theme?  |  | Y | N |   |   |   |
| (5) Is there a good traffic flow through the exhibits and display?                                     |  | 1 | 2 | 3 | 4 | 5 |

NOTE: This insert is described in article on page 3,  
RECNOTES, Vol R-83-1.

**OHIO RIVER DIVISION  
VISITOR CENTER CHECKLIST (Continued)**

d. Is the text for interpretative material easy to understand?		1	2	3	4	5
(1) Is it in layman's terms?	1	2	3	4	5	
(2) Does it avoid or explain technical jargon?	1	2	3	4	5	
(3) Is it too long or tedious?	1	2	3	4	5	
e. Is the audiovisual material easy to understand?		1	2	3	4	5
(1) Is it in layman's terms?	1	2	3	4	5	
(2) Does it avoid or explain technical jargon?	1	2	3	4	5	
(3) Is it too long or tedious?	1	2	3	4	5	
f. Are various techniques of display used (such as audiovisual, artifacts, flat wall, etc.)?		1	2	3	4	5
(1) Percentage of exhibits that are primarily audiovisual?	_____ %					
(2) Percentage of exhibits that are primarily text?	_____ %					
(3) Percentage of exhibits that are primarily auditory only?	_____ %					
(4) Percentage of other exhibits?	_____ %					
g. Are the exhibits primarily active or passive?		1	2	3	4	5
h. Do the exhibits and displays utilize standard off-the-shelf equipment or is it primarily custom work?	_____					
i. Has an interpretive prospectus been prepared?			Y	N		
(1) Have recommendations been implemented?	Y   N					
(2) If not, why not?	_____					
<b>4. Information Folders</b>						
a. Do they include information we wish to convey to the public as well as information the public would like to receive?		1	2	3	4	5
b. Are folders available at visitor facilities?			Y	N		
c. Are they displayed attractively?		1	2	3	4	5
d. Is it obvious that these are free to the public?			Y	N		
<b>5. Operations</b>						
a. Is the staffing adequate?		1	2	3	4	5
(1) Are self-guided tours used?	Y   N					
(2) Do the exhibits stand on their own?	1   2   3   4   5					
(3) Is additional information necessary from the staff?	Y   N					
(4) Is the staff readily accessible to the public?	Y   N					
(5) Is the staff knowledgeable about the display and the Corps?	1   2   3   4   5					
(6) How many people work directly in the center?	_____					
(7) Is reduced staffing an option?	Y   N					
b. Does the visitor center receive adequate use by the public?		1	2	3	4	5
(1) What is the annual visitation?	_____					
(2) What is the peak daily visitation?	_____					
(3) What is the peak month for visitation?	_____					
(4) Is the visitation primarily local, repeat visitors, or transient?	_____					
(5) Is the center made available to school and community groups?	Y   N					
(6) Does the staff contact schools and groups and invite them to the center?	Y   N					
(7) Do these groups regularly visit?	Y   N					
(8) Is the center available to groups, by special arrangements, outside of regular office hours?	Y   N					
(9) What other actions have been taken to encourage visitation?	_____					
c. Are the hours of operation convenient for the visitor?		1	2	3	4	5
(1) Are the hours of operation posted where they can be seen?	Y   N					
(2) Summer hours of operation?						
Days of the week	_____					
Hours of the day	_____					

**OHIO RIVER DIVISION  
VISITOR CENTER CHECKLIST (Concluded)**

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- (3) Spring and fall hours of operation:  
     Days of the week \_\_\_\_\_  
     Hours of the day \_\_\_\_\_
- (4) Winter hours of operation:  
     Days of the week \_\_\_\_\_  
     Hours of the day \_\_\_\_\_
- d. Is the building comfortable in terms of lighting, heating, air conditioning, drinking fountains, and rest rooms? 1 2 3 4 5
- e. Is the building adequate in terms of visitor capacity and configuration? 1 2 3 4 5
- f. Have there been incidents of vandalism in the past year? Y N
- (1) How many? \_\_\_\_\_
- (2) How severe? \_\_\_\_\_
- (3) Any particular target? What? \_\_\_\_\_
- g. Are adequate security devices installed? Y N
- (1) Door and window alarms? Y N
- (2) Sound and movement detectors? Y N
- (3) Closed circuit TV? Y N
- (4) Fire alarms? Y N
- (5) Smoke detectors? Y N
- h. What percentage of the time are the main exhibits operational? \_\_\_\_\_ %
- i. If there is a main audiovisual presentation, what percentage of the time is it operational? \_\_\_\_\_ %
- j. Is there an adequate supply of all types of backup equipment, e.g., projectors, tape players, etc. 1 2 3 4 5
- k. Are there adequate funds for operation of the center? 1 2 3 4 5
6. Overall Rating 1 2 3 4 5
7. Comments

\_\_\_\_\_  
Primary Evaluator

\_\_\_\_\_  
Title

\_\_\_\_\_  
Phone